

PROJECT TITLE : Unit Operations II
PERIOD COVERED : March 1st - 26th, 1980
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NITRATE REDUCTION OF STRIPS

To remain within the agreed renting-time of the Ex-Technik rotocell extractor, trials were carried out in two shifts during two weeks (Ref. 1).

52 trials were made to date using different extraction materials:

Cut-Tobacco	9 trials
RL-Europe Feedstock	6 trials
Short stems	5 trials
Strips	32 trials

A lot of samples are still in the labs for analysis, mainly the cut-tobacco samples.

The table on appendix 1 shows a choice of different results from the trials made on the rented extractor.

RL-Europe Feedstock

NO₃-N reduction is more influenced by the water temperature than by the feedstock to water ratio.

Stems

At 19 kg/h feedrate we notice an increase from 81 % to 96 % in NO₃-N reduction when changing the temperature from 80° C to 90° C.

It is interesting to observe that at 80° C the NO₃-N reduction increases from 81 % to 93 % when doubling the feedrate. This was not observed with RL-Feedstock where the NO₃-N reduction was higher at a smaller feedrate.

Strips

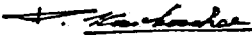
As the table shows, best results were achieved at 80° C and a feedstock to water ratio of 1 : 10.


When changing this ratio to 1 : 6, the $\text{NO}_3\text{-N}$ reduction was only 81 %.

By using a water temperature of only 20°C , the $\text{NO}_3\text{-N}$ reduction was still 75 %.

In conclusion we can say that this machine is suitable for the extraction of different types of feedstock materials. An offer was received from Ex-Technik.

PROCESS DEVELOPMENT


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REFERENCES

Ref. 1 : Notebook I, KPA/NIL, pages 1-64.

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	Temp. °C	Time min.	Input Feedstock kg/h	Input Water kg/h	NO ₃ -N Reduction in %
RL-Europe Feedstock	50	40	18	180	86
	50	40	18	108	85
	80	40	36	216	90
	80	40	18	180	89*
	80	40	18	108	97
Stems (lot 7999)	80	40	18	180	81
	80	40	36	360	93
	90	40	18	180	96
	90	40	36	360	96
Strips (MLF Burley Blend)	20	40	18	108	75
	50	40	18	108	78
	80	40	18	108	81
	80	40	18	180	93

*This trial will be repeated as soon as possible.

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